Amendments to the Claims

The listing of the claims will replace all prior versions, and listings, of claims on this application:

Listing of Claims:

Claims 1-26 (Cancelled)

Claim 27 (Currently Amended) A method for mediating ~~transgenic intramolecular~~ recombination ~~selected from deletions of DNA sequences located between two *six* sites and inversions of DNA sequences located~~ between two *six* sites, in *in vitro* ~~mammalian~~ cells, comprising the steps of transfecting the ~~mammalian~~ cells with prokaryotic beta recombinase derived from *Streptococcus* and transfecting the ~~mammalian~~ cells with DNA sequences containing *six* sites that allow recombination activity; wherein recombination occurs between two *six* sites.

Claim 28 (Currently Amended) A method for mediating ~~transgenic intramolecular~~ recombination ~~selected from deletions of DNA sequences located between two *six* sites and inversions of DNA sequences located~~ between two *six* sites, in *in vitro* ~~mammalian~~ cells, comprising the steps of transfecting the ~~mammalian~~ cells with prokaryotic beta recombinase derived from *Streptococcus* and integrating DNA sequences containing *six* sites that allow recombination activity into chromatin of the ~~mammalian~~ cells; wherein recombination occurs between two *six* sites.

Claims 29-32 (Cancelled)

Claim 33 (Previously Amended) A method according to claim 27, wherein two or more intramolecular recombination events involving different DNA sequences located between different *six* sites occur at the same time.

Claim 34 (Cancelled)

Claim 35 (Previously Amended) A method according to claim 27, wherein an intramolecular deletion of DNA sequences located between directly oriented *six* sites is obtained.

Claim 36 (Previously Amended) A method according to claim 27, wherein an intramolecular inversion of DNA sequences located between inverted repeated *six* sites is obtained.

Claim 37 (Previously Amended) A method according to claim 27, wherein an intramolecular deletion of a DNA sequence located between two directly oriented *six* sites is obtained.

Claim 38 (Previously Amended) A method according to claim 27, wherein an intramolecular inversion of a DNA sequence located between two inversely oriented *six* sites is obtained.

Claim 39 (Currently Amended) A method ~~according to claim 27,~~ for mediating recombination between two *six* sites, in *in vitro* cells, comprising the steps of transfecting the cells with prokaryotic beta recombinase derived from *Streptococcus* and transfecting the cells with DNA sequences containing *six* sites that allow recombination activity; wherein an intramolecular deletion of a DNA sequence located between direct repeated DNA sequences containing *six* sites is obtained.

Claim 40 (Currently Amended) A method ~~according to claim 27,~~ for mediating recombination between two *six* sites, in *in vitro* cells, comprising the steps of transfecting the cells with prokaryotic beta recombinase derived from *Streptococcus* and transfecting the cells with DNA sequences containing *six* sites that allow recombination activity; wherein an intramolecular inversion of a DNA sequence located between inverted repeated DNA sequences containing *six* sites is obtained.

Claim 41 (Previously Amended) A method according to claim 35, wherein the DNA sequences are located within an extrachromosomal DNA substrate.

Claim 42 (Previously Amended) A method according to claim 36, wherein the DNA sequences are located within an extrachromosomal DNA substrate.

Claim 43 (Currently Amended) A method for catalyzing site-specific resolution of DNA sequences located between *six* sites in an extrachromosomal substrate transfected into an *in vitro* ~~mammalian~~ cell, comprising the step of catalyzing the site-specific resolution with prokaryotic beta recombinase derived from *Streptococcus*; wherein recombination occurs between *six* sites.

Claim 44 (Previously Presented) A method according to claim 43, wherein the extrachromosomal substrate is a plasmid.

Claim 45 (Previously Presented) A method according to claim 43, wherein the gene coding is introduced by transfection.

Claim 46 (Previously Presented) A method according to claim 43, wherein the resolution is deletion.

Claim 47 (Previously Presented) A method according to claim 43, wherein the resolution is inversion.

Claims 48-49 (Cancelled)

Claim 50 (Previously Amended) A method according to claim 66, wherein the *six* sites are wrapped on a nucleosome at several locations.

Claims 51-52 (Cancelled)

Claim 53 (Currently Amended) A method for mediating ~~transgenic intramolecular~~ recombination in *in vitro* ~~mammalian~~ cells, comprising the steps of transfecting ~~mammalian~~ the cells with prokaryotic beta recombinase derived from *Streptococcus* and transfecting the ~~mammalian~~ cells with DNA sequences containing *six* sites that allow recombination activity; wherein recombination occurs between *six* sites and in the presence of cell factors comprising HMG1 chromatin-associated protein.

Claim 54 (Cancelled)

Claim 55 (Currently Amended) A method for mediating ~~transgenic intramolecular~~ recombination in chromatin structures ~~of mammalian cells~~, comprising the steps of transfecting *in vitro* ~~mammalian~~ cells with prokaryotic beta recombinase derived from *Streptococcus* and integrating DNA sequences containing *six* sites that allow recombination activity into chromatin of the ~~mammalian~~ cells; wherein recombination occurs between *six* sites and in the presence of cell factors comprising HMG1 chromatin-associated protein.

Claim 56 (Previously Amended) A method according to claim 28, wherein an intramolecular deletion of DNA sequences located between direct repeated *six* sites is obtained.

Claim 57 (Previously Amended) A method according to claim 28, wherein an intramolecular inversion of DNA sequences located between inverted repeated *six* sites is obtained.

Claims 58-61 (Cancelled)

Claim 62 (Previously Presented) A method according to claim 41, wherein the extrachromosomal DNA substrate is a plasmid.

Claim 63 (Previously Presented) A method according to claim 42, wherein the extrachromosomal DNA substrate is a plasmid.

Claim 64 (Currently Amended) A method for mediating ~~transgenic intramolecular~~ recombination ~~selected from deletions of DNA sequences located between two *six* sites and inversions of DNA sequences located~~ between two *six* sites, in mouse cells, comprising the steps of transfecting mouse cells with prokaryotic beta recombinase derived from Streptococcus and transfecting the mouse cells with DNA sequences containing *six* sites that allow recombination activity; wherein recombination occurs between two *six* sites.

Claim 65 (Currently Amended) A method for mediating ~~transgenic intramolecular~~ recombination ~~selected from deletions of DNA sequences located between two *six* sites and inversions of DNA sequences located~~ between two *six* sites, in mouse cells, comprising the steps of transfecting mouse cells with prokaryotic beta recombinase derived from *Streptococcus* and integrating DNA sequences containing *six* sites that allow recombination activity into chromatin of the mouse cells; wherein recombination occurs between two *six* sites.

Claim 66 (Currently Presented) A method for catalyzing site-specific resolution of DNA sequences located between *six* sites which are integrated into chromatin of an *in vitro* ~~mammalian~~ cell, comprising the step of catalyzing the site-specific resolution with prokaryotic beta recombinase derived from *Streptococcus*; wherein recombination occurs between two *six* sites.

Claim 67 (Cancelled)

Claim 68 (New) A method according to claim 27, wherein the cells comprise eukaryotic cells.

Claim 69 (New) A method according to claim 27, wherein the cells comprise mammalian cells.

Claim 70 (New) A method according to claim 28, wherein the cells comprise eukaryotic cells.

Claim 71 (New) A method according to claim 28, wherein the cells comprise mammalian cells.

Claim 72 (New) A method according to claim 39, wherein the cells comprise eukaryotic cells.

Claim 73 (New) A method according to claim 39, wherein the cells comprise mammalian cells.

Claim 74 (New) A method according to claim 40, wherein the cells comprise eukaryotic cells.

Claim 75 (New) A method according to claim 40, wherein the cells comprise mammalian cells.

Claim 76 (New) A method according to claim 43, wherein the cells comprise eukaryotic cells.

Claim 77 (New) A method according to claim 43, wherein the cells comprise mammalian cells.

Claim 78 (New) A method according to claim 53, wherein the cells comprise eukaryotic cells.

Claim 79 (New) A method according to claim 53, wherein the cells comprise mammalian cells.

Claim 80 (New) A method according to claim 55, wherein the cells comprise eukaryotic cells.

Claim 81 (New) A method according to claim 55, wherein the cells comprise mammalian cells.

Claim 82 (New) A method according to claim 66, wherein the cells comprise eukaryotic cells.

Claim 83 (New) A method according to claim 66, wherein the cells comprise mammalian cells.